

**TORUS TRAIN OPS**

# Getting Started Guide

How Torus thinks — its concepts, its workflow, and the order to build your railroad in.

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# Getting Started

## Welcome

Torus Train Ops turns your layout into an operating railroad. You describe the places, industries and equipment you already have; it works out what traffic that railroad would generate, writes the orders, assigns the cars, and hands each crew member the work in front of them.

**The short version:** you build your railroad once, then start a session. Each session, orders are generated from your consignments, you assign cars and jobs, and your crew works those jobs until the work is done.

## The seven screens

| Screen              | What it's for                                                     |
|---------------------|-------------------------------------------------------------------|
| Operations Center   | The landing page. What's moving, where the work is, what's stuck. |
| Industries          | Every industry and the cars standing at it right now.             |
| Locations           | The places on your layout and what's at each one.                 |
| Routes & Jobs       | The trains that do the work and the stops they make.              |
| Reports             | Printable views of the railroad's state and history.              |
| Trainmaster         | Settings, backups, and how the railroad operates.                 |
| Build Your Railroad | Where you create and edit everything above.                       |

The first five are for *running* the railroad. The last two are for *setting it up*, and are visible to the Trainmaster role only.

Three further workspaces have no button of their own. They open from cards on the **Operations Center**, and that button stays lit while you are in them — it is the thread back.

| Workspace         | What it's for                                                   |
|-------------------|-----------------------------------------------------------------|
| Distribution Desk | Issue orders, and assign cars and jobs to them                  |
| Yardmaster        | Work already rolling — routing, handoffs, advancing the session |
| Crew Workspace    | Where a crew picks a train and works it                         |

## Core concepts

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Six ideas carry the whole application.

### Locations

A **Location** is a place on your layout — a town, a yard, a junction, an interchange. Locations nest: a Yard can sit *inside* a Town, which is how "Millbrook Yard, at Millbrook" is expressed. Settlements (Towns, Cities) are the parents; railroad features (Yards, Junctions, Interchanges) are the children.

### Industries

An **Industry** is anywhere a car is worked — a mill, an elevator, a team track, a yard office. Each belongs to one location and has **tracks**; each track has a number of **spots**, meaning how many cars fit.

An industry declares what it **receives** and what it **ships**, in commodities. That is what makes traffic possible.

### Commodities and Car Types

A **Commodity** is what moves — lumber, grain, coal. A **Car Type** is what carries it, in AAR codes (XM boxcar, LO covered hopper). Commodities know which car types can carry them, so a boxcar is never assigned to a load that needs a tank car.

### Rolling Stock and Locomotives

Your actual equipment. Each car has a road number, a car type, a **home location** (where it belongs) and a **current location** (where it is now). Locomotives are assigned to jobs as power.

### Consignments

A **Consignment** is a standing traffic pattern: *this industry regularly ships this commodity to that industry, this many cars at a time*. Consignments are rules; they don't move anything themselves.

This is the piece newcomers most often miss. **You don't create orders by hand.** You describe recurring traffic once, and each session fresh orders are written from those rules. Get your consignments right and your railroad generates its own work indefinitely.

### Routes & Jobs

A **Job** — a train — has a route, the ordered list of locations it serves, and optionally assigned power. Orders are given to jobs, and a job can only work an order whose pickup and delivery are both on its route.

## How they fit together

Consignment → Order → assigned to a Car and a Job → worked by a crew → Closed  
(rule) (this (Distribution Desk) (Crew Workspace)  
session)

## Build your railroad

**Build Your Railroad** holds nine cards in three groups. Build them in this order — each depends on the ones before it.

### Foundation

1. **Railroad Profile** — name, road name, era, scale. Cosmetic, but it appears on printed paperwork.
2. **Locations** — every town, yard, junction and interchange. Create settlements first, then the railroad features inside them.
3. **Car Types** — the AAR types you run. A standard set is already there; add or edit as needed. This is the one card that opens a dialog rather than a page of its own, and the same dialog is reachable from the Car Type field on any car. A type's **code** is what every car, consignment and commodity refers to it by, so once anything uses a code it can't be changed — the name and description still can. A code nothing uses yet can be changed freely ( GB to GON , say).

### Equipment

1. **Commodities** — what your railroad hauls, and which car types can carry each.
2. **Rolling Stock** — your cars. Bulk-import from a spreadsheet or JMRI rather than typing; see the **Import & Export Guide**.
3. **Locomotives** — your engines, with home locations.

### Work

1. **Industries** — where cars are worked. For each: its location, its tracks and spots, and what it receives and ships. Every track needs a name, and no two tracks at the same industry may share one — beyond that, name them however you like: Receiving , WBST1 and 12 are all fine. Renaming a track later carries the cars standing on it along.
2. **Consignments** — the recurring traffic between industries. This is where the railroad comes alive.
3. **Routes & Jobs** — the trains, and the stops each one makes.

**Tip:** Start smaller than you think. Three industries and two jobs produce a real, working session you can learn from in an evening, and nothing has to be redone when you add the rest of the layout later.

**Note:** Names are yours. Locations, industries, tracks, commodities and jobs can be called anything — full names, abbreviations or plain numbers — and renaming one later updates it everywhere. The one thing that behaves like a key is a car type's code, above.

## Seeing the sample railroad first

A small sample railroad ships with the application: the Cedar River Railroad, a 1980s Midwest short line with three towns, seven industries and two jobs. Go to **Trainmaster** → **Backup & Restore** → **Restore from File** and choose `Cedar River Railroad - Sample.json`, then close and reopen. It's the fastest way to see how a finished railroad is put together, and it's the railroad used in the how-to videos.

**Warning:** Restoring replaces everything currently in the application. Back up your own work first.

## Your first operating session

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A session is one operating day.

### 1. Issue the orders

Go to **Operations Center** → **Distribution Desk** and click **Issue Car Orders**. This opens a new session and writes its orders in one step: your consignments are read, today's traffic is decided, and the orders appear on the Desk. You'll be told how many were issued.

### 2. Assign cars and jobs

Every new order starts **Open** — it knows what needs to move and where, but not which car or which train.

Assign each order by hand from the Desk, or click **Auto Assign** to match suitable cars and jobs across all unassigned orders at once. An order with both a car and a job becomes **Applied**, ready for a crew.

### 3. Work the jobs

Crews open the **Crew Workspace**, pick their train and work it. Each pickup and set-out is recorded as it happens.

### 4. Finish up

There is no "close session" step. When the work is done, the **Session Closeout** report summarises what happened, and the next session begins the next time you click **Issue Car Orders** — closed orders are cleared at that point.

If you want to move the railroad on a session without issuing new orders — to let loading and unloading progress, for instance — use **Advance Session** on the **Yardmaster** page. **Send Empties Home** there creates return orders for empty cars away from home.

Save a backup at the end of every session.

## Orders, cars, and jobs

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### Order statuses

| Status     | Meaning                                                |
|------------|--------------------------------------------------------|
| Open       | Written, but no car and no job yet                     |
| Applied    | A car and a job are assigned; ready to be worked       |
| In Transit | The car has been picked up and is moving               |
| Working    | The car is at its destination being loaded or unloaded |
| Closed     | Done                                                   |

### Car statuses

| Status                        | Meaning                                                                                    |
|-------------------------------|--------------------------------------------------------------------------------------------|
| Available                     | Free to be assigned                                                                        |
| Assigned                      | Spoken for by an order, not yet moved                                                      |
| On Train                      | Picked up, riding in a train                                                               |
| At Industry                   | Spotted at its destination                                                                 |
| Released                      | Work finished, waiting to be pulled                                                        |
| Held at Yard /<br>Interchange | Set out at a yard or interchange with no industry chosen — waiting for a job to take it on |

Two further facts travel with a car: its **lading** — Loaded or Empty — and, when it's at an industry, its **placement**: Properly Spotted or Off Spot.

### Why an order might not assign

If **Auto Assign** leaves an order Open, it's usually one of two things:

- **No suitable car** — nothing Available of a car type that can carry the commodity.
- **No job serves the route** — no job's route includes both the pickup and the delivery location.

A **full destination** is handled a step earlier: when a session is issued, an industry with no free spot on its working tracks isn't sent more cars that session, so those orders never appear. The **Unfulfilled Traffic** report

names the reason for each one.

## When the track is full on arrival

Room is checked when orders are issued, not when the train pulls in, so a crew can still find the track full — another job got there first, or a car that should have been pulled wasn't. The set-out dialog shows how many spots each track has open and won't confirm a set-out onto a full one. The crew has the same choices a real crew has:

- **Use the industry's overflow track**, if it has one. The car is delivered but sits **Off Spot**, and comes back onto a switch list for the spotting move once a job is assigned to it.
- **Set it out at a yard or interchange** with no industry chosen. The car is **Held at Yard** (or Interchange), its order stays open, and it waits — on the Yardmaster board under *Not Assigned* — until you give it a job. That's your call and your timing: nothing sends it back automatically, and nothing stops you sending it back before the industry has room if you'd rather the crew try again.

Either way the order is not lost and no work is invented.

## Rules the application enforces

Some things are refused outright, with an explanation rather than a silent failure:

- A car can't be on two active orders at once.
- You can't delete a location, industry, car or job that still has live work against it.
- An industry holding cars or live work can't be moved to another location.
- A track with cars standing on it can't be removed from its industry — move the cars first.
- A car type's code can't be changed while any car, consignment, commodity or open order uses it.
- Every track needs a name, unique within its industry.

Two Setup edits that are allowed, and what they do to the cars involved: renaming a track keeps every car on it; changing a car's Current Industry clears its track and spot unless the new industry has a track of the same name.

## Running a session

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### Choosing how crews see their work

**Trainmaster** → **Railroad Operations** decides what a crew is handed. Two settings, and the first outranks the second:

- **Switch List Format** — *Digital Work Order*, worked on screen, or *Paper Switch List*, a printed sheet.
- **Crew Workspace Format** — *Digital Workspace* or *Car Cards & Waybills*.

Choosing Car Cards & Waybills moves the railroad to the digital work order automatically, because a paper railroad reads a sheet rather than a screen.

### The Crew Workspace

A crew picks a train on the left and works it on the right. Each move is recorded as it's made: a pickup marks the car On Train; a set-out spots it and asks whether it's properly spotted.

### Car Cards & Waybills

The traditional paperwork model, on screen. The left pane holds the job's packet of car cards; selecting a card pulls the waybill attached to it. A car card belongs to the *car*; a waybill belongs to the *shipment*. They are deliberately never merged.

The arrangement is the same on a phone — the rack on the left, the waybill on the right — with a sideways swipe between the two rather than a different layout to learn.

## Reports

**Reports** holds five printable views:

| Report               | Answers                                |
|----------------------|----------------------------------------|
| Yard Inventory       | What's standing where, right now       |
| Industry Work Report | What each industry is waiting for      |
| Wheel Report         | Every car movement, in order           |
| Unfulfilled Traffic  | What didn't get done, and why          |
| Session Closeout     | A summary of the session just finished |

Movement history is captured **at the moment of the move** and never recalculated, so a report of last session still says what was true then.

## Common questions

**Do I have to create orders by hand?** No. Write consignments once and each session generates its own orders. Manual orders exist for one-off moves.

**What happens to unfinished work at the end of a session?** It stays open and carries forward — nothing is discarded. The Session Closeout report lists what was left. Closed orders are cleared when the next session is issued, so the board stays current.

**Can I run without a crew?** Yes. Sign in as Trainmaster and work the jobs yourself — everything behaves the same solo.

**Why can't I delete this location?** Something still depends on it: industries, cars, or a job whose route includes it. The refusal message names what.

**My car is at the right industry but the order isn't closing.** Check the placement. A car set out *Off Spot* has arrived but isn't properly spotted, so its work isn't complete.

**The track was full when my train arrived. What now?** See *When the track is full on arrival* above: use the overflow track, or set the car out at a yard or interchange and give it a job when you're ready.

**Can I rename things once the railroad is running?** Yes. Names aren't what the railroad runs on — rename a location, industry, track, commodity or job and everything follows. The exception is a car type's code, which is locked while anything uses it.

**Do I need an internet connection?** Only to activate your licence. Running sessions is entirely local.

**Can I change my railroad mid-session?** Yes, with care. Setup changes take effect immediately, but an industry holding live work can't be moved, and deleting anything with work against it is refused.

**Where is my data?** In `%APPDATA%\Torus Train Ops`, alongside photos and backups. Uninstalling doesn't delete it.

## Getting help

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Questions, problems or feedback — reach out any time:

**Email:** [Railworksstudio@gmail.com](mailto:Railworksstudio@gmail.com)

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Thanks for choosing Torus Train Ops. We hope it helps make every operating session more organized, more realistic, and more enjoyable.

— Brian & Diana, Founders, Railworks Studio